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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,220	07/17/2006	Adolf Friedrich Fercher	ZEI-3303/500343.20324	2703
26418	7590	06/15/2009		
REED SMITH, LLP ATTN: PATENT RECORDS DEPARTMENT 599 LEXINGTON AVENUE, 29TH FLOOR NEW YORK, NY 10022-7650			EXAMINER STULTZ, JESSICA T	
			ART UNIT	PAPER NUMBER
			2873	
			MAIL DATE	DELIVERY MODE
			06/15/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/586,220	Applicant(s) FERCHER, ADOLF FRIEDRICH	
	Examiner JESSICA T. STULTZ	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Examiner's Comments

The amendments to claims 20, 21, 24-25, and 27 overcome the previous objections and 112 rejections of these claims.

Claim Objections

Claims 21, 30, 32, 35-37, and 38 are objected to because of the following informalities: claim 21, line 3, "measurement beam or reference beam" should be "measurement beam" since there is no previous mention of a reference beam in dependent claim 20; claim 30 should depend from claim 23 since there is no mention of a scanning device in claim 20; claims 32 and 35-37 should depend from claim 27 since there is no mention of a reference and measurement arm/beam path in claim 20; claim 38, "the dual beam method" should be "a dual beam method". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20-22, 25-27, 29, 31-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Fercher US 5,847,827, herein referred to as Fercher '827.

Regarding claim 20, Fercher '827 discloses a short-coherence interferometer (Figures 4-6 and Abstract) for measuring partial distances of the eye which focuses the measurement beam on the respective coherence window and/or reduces required interferometer mirror scan distances to

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distances that are less than distances which must be measured (Abstract and Column 6, lines 11-56), comprising: at least one deflecting element with a deflecting angle (6/24/34, Figures 6-7 and 11-12) and elements of focusing optics (12) in the short-coherence interferometer carrying out a periodic back-and-forth movement (Figure 5) so that the measurement beam focus which is generated by the focusing optics and imaged on the eye by relay optics is moved synchronously with the coherence window from the cornea along the optic axis of the eye to the retina (Column 7, line 32-Column 9, line 15 and Column 12, line 42-Column 14, line 32, Figures 11-12), and back (Figures 4-6 and 11-12, wherein the measurement focus 13 moves within the eye between the surface of the eye to the retina).

Regarding claim 21, Fercher '827 further discloses wherein at least one deflecting element (24) moves to direct the measurement beam sequentially to a series of reflectors (reflectors 70/76, Figure 12) arranged in a staggered manner with respect to depth and/or laterally (Shown in Figure 12).

Regarding claim 22, Fercher '827 further discloses that the position of the reflectors (75) which are arranged in a staggered manner with respect to depth and laterally is adjustable and/or the positioning is carried out in an adaptive manner according to previously determined reference positions of the eye interfaces (Column 14, lines 33-39, Figure 12).

Regarding claim 25, Fercher '827 further discloses that the measurement beam focus generated by the focusing optics is imaged on the eye by relay optics (27/27' or 74/73/77), wherein the corneal vertex is arranged exactly or approximately at a distance from the relay optics, where f is the focal length of the relay optics, L is the optical length of the eye, D is the

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distance of the reflectors associated with the cornea and fovea centralis (Shown in Figures 7 and 12).

Regarding claim 26, Fercher '827 further discloses that the measurement beam focus generated by the focusing optics is moved back and forth periodically by a distance somewhat greater than $L - D$ (L = optical length of the eye; D = distance of the reflectors associated with the cornea and fovea centralis) (Column 7, line 32-Column 9, line 15 and Column 12, line 42-Column 14, line 32, Figures 11-12).

Regarding claim 27, Fercher '827 further discloses that the short-coherence interferometer is split into an interferometer measurement arm and a reference arm (Column 14, lines 40-65) which is carried out by means of one or more fiber-optic couplers (115, figure 13).

Regarding claim 29, Fercher '827 further discloses that at least one deflecting element and elements of the focusing optics are mounted on separate scanning devices which are moved periodically back and forth, and the movements of the two scanning devices are electronically synchronized, or the movements can be modified in function relative to one another (Column 7, line 32-Column 9, line 15, wherein the mirror 24 and lens 12 move as claimed to change the focus from the cornea to the retina, Figures 4-5).

Regarding claim 31, Fercher '827 further disclose that a collecting lens, a dispersion lens or an optical system comprising a plurality of fixed or variable elements is used as focusing optics (lens 12, Figures 4-5).

Regarding claim 32, Fercher '827 further discloses that a so-called rapid scan optical delay line or other path length modulator is also used with the interferometer in the reference arm or measurement arm (Column 6, lines 11-36 and Column 12, line 64-Column 13, line 33).

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Regarding claims 33-34, Wei et al '613 further discloses that the initial coincidence of the measurement focus and coherence window is placed approximately in the center of the anterior chamber of the eye or at another desired location by additional means for adjusting an optical element in the beam path, specifically by means of a mirror (Figures 6-7, 11-12, wherein the mirrors are moved to change the location of the focus on the eye).

Regarding claim 35, Fercher '827 further discloses that the scan travel is reduced by optical folding of the reference beam path and/or measurement beam path (Shown in Figure 6, wherein the scan travel is reduced by beam splitter 4).

Regarding claim 36, Fercher '827 further discloses that dispersion compensation is carried out automatically by traversing wedge plates which are arranged in the reference beam path parallel to the movement direction, and the compensating action therefore depends on the displacement position (Shown in Figure 12, wherein the wedge plates 91, 95).

Regarding claim 37, Fercher '827 further discloses that means are provided for adjusting or orienting the measurement beam axis relative to the optical axis or to the visual axis of the eye (adjusting via mirror 75, Figure 12).

Regarding claim 38, Fercher '827 further disclose that a construction based on a dual beam method is used (Figures 6-7 and 11-12).

Regarding claim 39, Fercher '827 further disclose that a right-angle mirror or right-angle prism is provided as deflecting element (34 is a right angle prism, Figure 7).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23-24, 28, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fercher '827, as applied to independent claim 20 above, in view of Knuttel WO 02/04884, herein referred to as Knuttel '884.

Regarding claims 23, Fercher '827 further disclose that at least one deflecting element (24) is on a table of a scanning device that is moved periodically back and forth (Column 10, lines 14-31), but does not specifically disclose that the deflecting element and the focusing optics are arranged one behind the other and/or next to one another in the movement direction on a table that is moved periodically back and forth. In the same field of endeavor of short-coherence interferometers (Abstract), Knuttel '884 teaches of a deflecting element (8) and the focusing optics (11) arranged one behind the other and/or next to one another (Figures 1-2) in the movement direction on a table (16) that is moved periodically back and forth (15). Therefore it would have been obvious to combine the teaching of Knuttel '884 with the interferometer of Fercher '827 for the purpose of providing a movable light beam for depth scanning (Abstract).

Regarding claim 24, Fercher '827 and Knuttel '884 disclose and teach of an interferometer device as shown above, and Fercher '827 further discloses that the at least one deflecting element (24) and the focusing optics (12) are arranged at a desired angle to the movement direction (Figure 12) and Knuttel '884 further teaches that the at least one deflecting element (8) and the focusing optics (11) are arranged one behind the other and/or next to one another (Figures 1-2) in the movement direction on a table (16) that is moved periodically back and forth (15).

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Regarding claim 28, Fercher '827 and Knuttel '884 disclose and teach of an interferometer device as shown above, and Knuttel '884 further teaches that at least one deflecting element (8) and elements of the focusing optics (11) are mounted next to one another in the movement direction or at an angle to the movement direction on separate scanning devices which are moved periodically back and forth (Figures 1-2).

Regarding claim 30, Fercher '827 and Knuttel '884 disclose and teach of an interferometer device as shown above, and Fercher '827 further discloses that the scanning device is a scanning table controlled by a stepper motor or piezo-motor, a voice coil scanner, or an ultrasound piezo-scanning table (Column 10, lines 14-31).

Response to Arguments

Applicant's arguments with respect to claims 20-39 have been considered but are moot in view of the new ground(s) of rejection as shown above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA T. STULTZ whose telephone number is (571)272-2339. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jessica T Stultz
Primary Examiner
Art Unit 2873

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